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March 18, 2022

Docket Control
ARIZONA CORPORATION COMMISSION
1200 West Washington Street
Phoenix, Arizona 85007

RE: Arizona Public Service Company (APS or Company)
2022 Demand Side Management (DSM) Implementation Plan
Docket No. E-01345A-21-0087

In accordance with Decision No. 67744 (April 7, 2005), APS held its most recent DSM Collaborative on March 4, 2022. APS representatives provided updates on 2021 DSM program results, the DDSR Aggregation Tariff, and recent program changes.

Attached is a summary of the discussion and questions asked by stakeholders as Attachment A and materials presented at the meeting as Attachment B.

Please let me know if you have any questions.

Sincerely,

/s/ Elizabeth Lawrence

Elizabeth Lawrence

EL/me
Attachments

Attachment A

DSM Collaborative Meeting March 4, 2022

Meeting date and time

Friday, March 4, 2022, at 10:00 a.m.

Stakeholders in attendance

Alex Routhier, Western Resource Advocates (WRA)
Diane Brown, Arizona PIRG Education Fund
Ellen Zuckerman, SWEEP
Joe Cunningham, Sunny Energy
Laurie Woodall, RUCO
Marta Darby, Earthjustice
Phil Jones, Alliance for Transportation Electrification
Quinton Macdonald, Elevation Home Energy Solutions
Ranelle Paladino, ACC Staff

APS Staff in attendance

Bruce Brazis, Energy Innovation Analyst Sr.
Chris Baker, Energy Innovation Program Consultant
Christopher Baggett, Energy Innovation Analyst Sr.
Daniel Haughton, Director, Customer to Grid Solutions
Elizabeth Lawrence, Manager, State Regulatory Strategy and Compliance
Jay Delaney, Supervisor, Demand Side Programs
Judson Tillinghast, Supervisor, Product Development and Strategy
Kerri Carnes, Manager, Customer to Grid Solutions, Product Development and Strategy
Marina Estrella, Regulatory Advisor
Raymundo Martinez, Energy Innovation Advisor
Renee Guillory, Energy Innovation Program Consultant
Rodney Ross, Director, State Affairs and Compliance
Roger Krouse, Energy Innovation Advisor
Todd Komaromy, Manager, State Regulatory Affairs
Tom Hines, Contract Services, Product Development and Strategy
Trevor Swanson, Energy Innovation Advisor

This meeting was held virtually via Microsoft Teams.

Summary

In accordance with Decision No. 67744 (April 7, 2005), APS held a DSM Collaborative Meeting on March 4, 2022. APS provided a 2021 DSM highlights update, talked briefly regarding the DDSR Aggregation Tariff, and touched on recent program updates. The presentation shared at this meeting is included in Attachment B.

2021 DSM Highlights

Kerri Carnes, Customer to Grid Solutions, Product Development and Strategy Manager provided an overview of the 2021 DSM achievements, including energy efficiency (EE) and peak demand savings achieved. APS's DSM program managers, Chris Baker, Chris Baggett, Tom Hines, Trevor Swanson, and Bruce Brazis provided an overview of the 2021 program results, including program participation, 2021 energy savings, and 2021 year-end spend. Programs and topics covered in the presentation were:

- Limited Income Weatherization
- Programming for New and Existing Homes
- Conservation Behavior (Including Home Energy Reports and Time of Use (TOU) Plan Coach)
- Multi-Family Homes
- Solutions for Businesses
- Schools
- Advanced Rooftop Controls (ARC) Pilot
- Demand Response/Rewards
- Energy and Demand Education
- Tribal Community Energy Efficiency

Distributed Demand-Side Resources (DDSR) Aggregation

Due to time constraints, Ms. Carnes briefly mentioned that there are DDSR Aggregation Tariff updates, which were presented in a separate stakeholder meeting on February 25, 2022. A summary of DDSR Stakeholder meetings are filed publicly with the Commission, and APS welcomed interested parties to participate in DDSR Stakeholder meetings.

Recent Program Progress and Upcoming Items

Ms. Carnes mentioned that APS is seeing continued progress on the residential battery pilot. APS now has three partners, including Tesla. Reporting also covered new developments in the EV portion of APS's DSM portfolio, including the launching of the SmartCharge program and EV charger rebates. Ms. Carnes mentioned APS is requesting Commission approval of its 2022 DSM Implementation Plan prior to June 2022 in order to maximize the full benefit of the Cool Rewards program for summer peak demand this year.

Additional Stakeholder Discussion

- *Looking at these unprecedented results for low-income weatherization in 2021, it sounds like APS attributes a lot of this to the \$9,000 incentive. What do you think this suggests around certain changes that should be made to that cap moving forward?*
 - APS thinks \$9,000 is a good incentive; it is higher than other utilities and other funding. With this incentive, along with leveraging other funds, APS is able to meet customer needs. Even though the incentive is up to \$9,000, APS is

typically spending between \$6,000 and \$7,000 per home, which suggests all cost-effective measures are getting captured in the vast majority of cases.

- *How much of a barrier do structural, health and safety issues present in terms of enrolling homes into limited-income weatherization? Have you considered opportunities for pre-weatherization, accordingly?*
 - APS has to follow the Department of Energy program administered by the Arizona Department of Housing; they dictate the rules on how programs work. The Arizona Department of Housing covers all health and safety aspects with the funding they have. Health and safety are always the priority.
- *How does APS's New Homes initiative compare with SRP's program? Is APS aware of the new guidance coming from EPA regarding ENERGY STAR® new homes, and what will APS be doing to align the guidance with programs offered?*
 - SRP and APS programs are similar. In the past, APS and SRP have shared trainings on building science and other things of that nature. SRP and APS are also both promoting beneficial electrification, and innovative grid technology adoption to help the grid. APS offers lower incentives per home for ENERGY STAR® but also offers more options for other incentives. In terms of the new EPA requirements, APS is aware version 3.0 requirements are being phased out, so APS is planning to align to that new metric to ensure benchmarking is completed to align with what is expected to be ENERGY STAR® certified.
- *On the Plan Coach is there something that stood out regarding customer satisfaction or messaging that seems to resonate better than others?*
 - Plan Coach is a very targeted weekly communication that gives customers feedback on how they use energy. It is more frequent, direct feedback that informs the customer how they performed over a given week and how they could perform better the next week. Research indicates that by giving actionable ways to save, results can be seen directly, and these results may be driving the higher satisfaction scores we are seeing.
- *Sometimes language use in Plan Coach is complex and customers have questions about it, are there any questions APS is hearing from customers?*
 - APS will provide further information for discussion in the next Consumer Work Group Stakeholder Meeting.
- *With the change in your TOU hours later this year, can you speak to how you are changing Plan Coach to manage the communication around that, including the tips and strategies you are elevating to customers?*
 - APS is trying to keep this simple and focus on the benefit to customers on being able to load shift around a three-hour on-peak period. APS has interacted with the customer education outreach group, the Customer Advisory Board, and other stakeholders regarding this topic.
- *How are you leveraging your learnings from the TOU Plan Coach to apply to EV managed charging?*
 - APS will be leveraging these learnings directly into future Home Energy Report and Plan Coach communications that will be targeted to EV owners. In addition, the Company can use the same strategies to develop other customer information tools and messages.

- *Is there some communication similar to the SRP Scorecard?*
 - Yes, the SRP Scorecard is similar to the APS Home Energy Reports program that was originally launched in 2011.
- *What efforts has APS been able to implement for the ARC program for the faith community?*
 - APS provides energy assessments for nonprofits and has also met with United Methodist Church's lead pastor to talk about the program and other ways APS can help partner. The order is specific that the ARC program is available to school districts and nonprofits that help those in need and homeless. APS works with the faith community when they apply to our programs to determine if they are providing aid to the homeless and those in need.
- *Can APS provide initial thoughts on APS's planned response to the Commissioner Kennedy letter regarding demand response (DR)?*
 - APS is still putting together a response to the letter; it is a great opportunity to provide information about the success of DSM and DR Programs.
- *In reviewing the Pinnacle West shareholder slides presented at the end of last month; there is a significant investment in transmission and distribution over the next three years -- the capital plan suggests more than \$2 billion in this area. How is APS focus DSM investments as a non-wires alternative to mitigate this considerable dollar amount?*
 - Across the enterprise there is excitement for programs like Cool Rewards and it is an important part of a long-term plan. APS wants to make sure opportunities are created for customers at low or no costs to participate in DSM programs. APS is committed to deliver customer-sided solutions to help us achieve our clean energy goals. Currently, the state of Arizona is seeing rapid growth and economic development, bringing new businesses into the area. APS is committed to DSM and EE, but when there is new growth, sometimes new infrastructure needs to be built to accommodate those new customers.

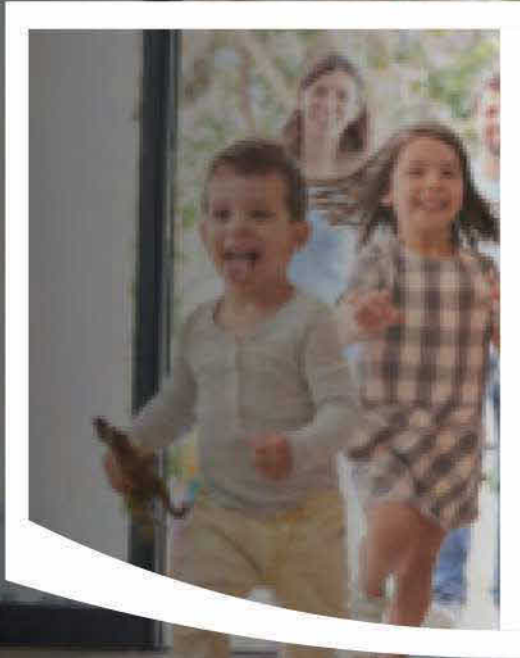
APS will be hosting its next DSM Collaborative the week of May 2nd.

Attachment B

DSM Collaborative Stakeholder Meeting

March 04, 2022





March 2022 | DSM Collaborative Meeting Agenda

1 | Welcome and Introductions

2 | Updates

a | 2021 DSM Highlights- A Year in Review

b | DDSR Aggregation Tariff

c | Recent Program Progress

3 | Discussion

2021 DSM Achievements Overview

- **DSM Support \$52.5 million**
 - \$7.9 million for Limited Income
- **EE Savings 319,000 MWh**
 - Achieved >95% of 2021 DSM Goal
 - 127,000 MWh higher EE than 2020
 - Cumulative = 24.8% of 2020 sales
- **Peak Demand Savings 272 MW**
 - 113 MWs from Cool Rewards
- **Launched many new Program Offerings for Customers**
- **Issued DDSR Aggregation RFP**



Limited Income Weatherization

Savings

- 3559 annual, 64,500 lifetime MWhs
- 1.8 MWs peak demand
- 101% of MWh goal
- Est. lifetime bill savings of \$8.6 million

Support

- >\$7.9 million, highest ever support

Program Highlights

- Continued higher COVID incentives max of \$9000/home

Customer Participation

- 835 homes weatherized



Existing Homes

Savings

- 20,500 Annual, 297,000 Lifetime MWhs
- 23.2 MWs Peak Demand
- 73% of MWh goal

Program Highlights

- Launched Connected Water Heating Controls
- Continued higher HVAC incentives for COVID

Customer Participation

- 87,000 LEDs
- 35,000 EE Smart Thermostats
- 6200 HVAC Quality Installs
- > 1000 Duct Repair
- > 1000 Home Energy Audits
- > 1000 Low Flow Showerheads
- > 700 Attic Insulation
- 8 Connected Water Heating Controls



New Homes

Savings

- 16,500 annual, 323,500 lifetime MWhs
- 11.5 MWs peak demand
- 69% of program goal

Program Highlights

- Launched 3 new measures: ducts in conditioned space, connected water heaters, EV pre-wire
- Earned ENERGY STAR Partner of the Year Award 2021

Customer Participation

- 6,785 ENERGY STAR Homes
- 9,140 Smart Thermostats
- 1,198 Ducts in Conditioned Space
- 169 EV Pre-Wire
- 72 homebuilders with 394 active subdivisions



Conservation Behavior

Savings

- 45,000 annual, 45,000 lifetime MWhs
- 42.6 MWs peak demand
- 64% of annual MWh goal

Program Delivery

- Launched Plan Coach with TOU and non-TOU rate plan customers
- Launched Spanish language Home Energy Reports
- New low/no cost tips for LMI households

Participation

- 1,250,000 email reports
- 1,043,000 printed reports
- 2,576,000 TOU plan coach emails
- 228,000 Non-TOU plan coach emails
- >35,000 customers visited program web pages
- 464,000 total program participants



Home Energy Reports – Print- TOU Plan Coach

Front page – TOU rate plans



400 North 3rd Street,
Phoenix, AZ 85004

Home Energy Report

July 21, 2021
Account number ****0001

Find money-saving tips, tools and programs and products and services for purchase at:
aps.com/save

Your energy use at a glance



A closer look at your energy use

Jun 20, 2021 – Jul 21, 2021



Who are you being compared to?
Similar Homes includes homes in your area that have a similar square footage and heating/cooling type. The Efficiency Zone represents the similar homes that used the least energy this billing period.

✓ Your electricity use was not in the Efficiency Zone.

✓ You used 22% less electricity than similar homes.

Celebrate Earth Month



Get a free Google Nest Thermostat with instant rebates

Help the planet and your energy bill by getting a free Google Nest Thermostat with our Earth Month offer. Here's how it works:

- Visit the APS Marketplace, and add the thermostat to your cart.
- Select "Join the Cool Rewards program."
- Instant rebates cover the \$129 thermostat. You pay taxes and shipping.

➔ Get your free thermostat at myaps.store/freetstat.

*Offer good while supplies last. 5/16/21-8/21/21

Tips to help you manage your usage



Use a plug-in power meter to find the biggest energy users in your home.



Talk with your household members about your energy savings plan.

Turn over ➔

Back page – TOU Rate Plan

Your average daily use during off- and on-peak hours

- 1 Save with lower-cost off-peak hours, before 3 p.m. and after 8 p.m., Monday-Friday. On weekends, save with off-peak hours all day.

Weekdays



Weekends



The shorter your orange bars, the more you can save on your bill. If your orange bars are high, look for more opportunities to save.

3 easy ways to save this winter



Set your thermostat to 68°F when at home and 60°F when away on winter vacation.



Weatherstrip windows and doors to keep warm air in and cold air out.



Go online to see your energy patterns and where you can use less.

➔ Find more tips at aps.com/save.

Frequently asked questions

What's a kWh?

A kilowatt hour (kWh) is a way to measure electricity use. A 100-watt lightbulb uses 1 kWh every 10 hours.

How does my home compare to similar homes?

Similar Homes includes homes in your area that have a similar square footage and heating type. The Efficiency Zone represents the similar homes that used the least energy this billing period. You can view your home information at aps.com/energyreports.

Want a more accurate home energy report?

For a more accurate look at your energy use and more personalized tips, please update your home profile at aps.com/save/homeprofile.

Why am I receiving these reports?

You've been selected to participate in our Home Energy Reports program, which provides personalized insights and recommendations to help you save energy.

How do I stop receiving reports?

Email us at aps@aps.com. You can also call us for assistance at (602) 371-2659 (in Metro Phoenix) or (855) 250-1886 (Outside Phoenix).

♻️ Printed on 100% post-consumer recycled paper using water-based inks.

We're here to help you save money

➔ Visit us at aps.com/energyreports

Find more energy saving programs

➔ aps.com/save



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Methodology

- **Online survey completed by 465 APS customers**
 - 280 surveys with TOU Plan Coach recipient customers
 - 185 surveys with TOU Plan Coach control customers (non-recipients to be used as a baseline)
 - Random selection from non-HER waves, receiving TOU Plan Coach communications for ~5 months prior to survey
 - TOU only customers (no Demand rate)
- **Survey fielded between Oct 5 and Oct 22, 2021**
 - ~3% overall response rate (email invitations sent to ~13k customers)



Summary of key findings



TOU Plan Coach is improving customer comprehension and satisfaction with their rate plan.

Compared to non-recipients, APS customers receiving TOU Plan Coach communications are:

- +14% more likely to be satisfied with their rate plan
- +10% to +14% more likely to know when on-peak hours start or end
- +9% more likely to know how to reduce their usage during on-peak hours
- +11% more likely to report energy shifting behavior



The TOU Plan Coach program is improving customer satisfaction with APS.

Compared to non-recipients, customers receiving TOU Plan Coach communications rate APS higher:

- +8% increase in overall satisfaction; -7% reduction in overall dissatisfaction with APS
- +9% “APS makes an effort to help me manage my monthly energy usages” (JD Power Price metric)
- +10% “APS creates messages that get my attention” (JD Power Comms metric)
- +10% “APS keeps customers informed about what they are doing to keep energy costs low” (JD Power Comms metric)

Multi-Family Homes

Savings

- 5400 annual, 102,000 lifetime MWhs
- 1.2 MWs peak demand
- 105% of MWh goal

Program Delivery

- Launched new Connected Water Heating

Participation

- 55,000 LEDs
- 1100 New EE Apartment Units
- 255 Smart Thermostats
- 42 Connected Water Heating Controls



Solutions for Business New and Existing Facilities

Savings

- 166,000 annual, 2.5MM lifetime MWhs
- 38 MWs peak demand
- 109% of MWh goal

Program Delivery

- Launched 3 new measures
- Shifted funds into C&I new construction due to hot market

Participation

- 22 trainings & 21 outreach meetings
- 646 completed projects
- 166 free audits for non-profits/SB
- 192 participating trade allies



Schools

Savings

- 25,000 annual, 380,000 lifetime MWh
- 5.4 MW peak demand
- 172% MWh goal!

Program Delivery

- Can also participate in Existing Facilities program and ARC pilot

Participation

- 112 projects
- 25 participating school districts
- 18 free energy audits



(New) Advanced Rooftop Controls Pilot

Approved in Decision No. 78164. Pilot provides incentives for HVAC measures focused on efficient ventilation for schools and non-profits

Savings

- 900 annual, 10,000 lifetime MWhs
- 0.3 MWs peak demand

Program Delivery

- Promoted through 10 trade ally trainings, webinars and email campaigns to eligible customers

Participation

- 3 Completed projects
 - 2 School districts
 - 1 Non-profit facility



Demand Response/Rewards

Cool Rewards

- 57,000 participating thermostats
- 113 MW peak hour impact
- Called 7 successful events

Peak Solutions C&I

- 68 enrolled customers
- 28 MWs peak hour impact
 - Lower than contracted due to COVID
- Called 7 successful events

Cool Rewards Program Delivery

- Doubled participation in 2021!
- Largest T-Stat DR capacity addition in the US*
- Free thermostat promos leverage OEM discounts
- DR device pre-enrollment

*according to program partner data

Instant rebates & discounts on smart thermostats at APS Marketplace



The advertisement features the APS logo in the top left corner. In the center, three smart thermostats are displayed: two white ones on the sides and one black one in the middle. Each thermostat has a gold bow tied around its top. The screens of the white thermostats show '68' and '68', while the black one shows '68'. Below the thermostats, the text reads: 'Tis the season for savings!', 'Just pay shipping + taxes', and 'MARKETPLACE.APS.COM'. A 'Learn More' button is located in the bottom right corner.

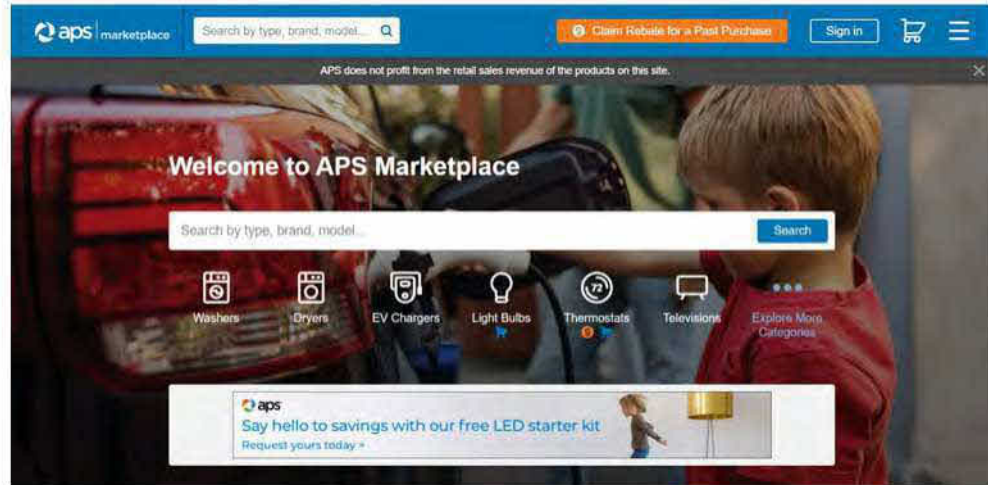
Energy and Demand Education

Customer Education Delivery Channels

- Online Marketplace
- Virtual Energy Check-Ups
- Online Energy Audits/Resources/Tools
- Energy Tips Education/Outreach
- Field Events Team

Participation

- 600,000 unique visits to Marketplace
- 33,100 smart t-stat DR Pre-Enrollment
- 23,500 online energy audits completed
- 19,100 free LED kits (76,400 bulbs)



Tribal Community Energy Efficiency

Savings

- 140 annual, 2300 lifetime MWh

Support

- \$365,000 in Tribal EE
- \$260,000 in Limited Income Weatherization

Program Delivery

- Program launched and expanded in 2021
- Currently conducting outreach with tribes to discuss priority projects

Participation

- 22 residential customer projects (in TCEE)
- 31 residential projects in LIW program
- 6 non-residential customer projects



DDSR Aggregation



Background on Decision No. 77855

- APS was ordered to file a tariff that permits and provides compensation for the aggregation of distributed energy storage and distributed demand-side resources
- Calls for the valuation of operating characteristics and various DDSR technologies
- Provide a process to incorporate stakeholder feedback before submitting the proposed tariff

Value Streams

- Capacity
- Demand Reduction
- Load Shifting
- Locational Value
- Voltage Support
- Ancillary and Grid Services

Technologies

- Connected Smart Thermostats
- Water Heating Controls
- Pool Pump Controls
- Managed EV Charging
- Electric Batteries
- Building Energy Management System

2021 AII-DDSR RFP

APS requested proposals for multiple grid services

Product A

Focus:

System capacity,
energy and
load shifting value

5-40 MW aggregated load

Product B

Focus:

Locational value on 6
APS feeders

1-5 MW aggregated load

Product C

Focus:

Ancillary services

1-5 MW system support

APS received 12 total bids from six bidders, with at least two bids for each of these services

RFP Products and Bids Overview

	Product A	Product B	Product C
Product Focus	System capacity, energy and load shifting value	Locational value on 6 APS feeders	Ancillary services
Requested Capacity Range	5-40 MW	1-5 MW	1-5 MW
Bids Submitted	6	4	2
Capacity Range Among Bids	5-40 MW	1-2.8 MW	5-15 MW

RFP Preliminary Selection

- Selected three products
 - Product A = 5 MW system capacity
 - Product B = 2.5 MW on 6 feeders
 - Product C = 5 MW ancillary services
- All three grid services products will be provided by aggregating residential batteries
- Anticipating services to be delivered starting in early 2023



Recent Program Progress and Upcoming Items



(New) Residential Battery Pilot

- \$3 million, 3-year pilot launched in October
- Incentives for newly purchased battery systems
 - **Data share:** \$500/kW up to \$2,500 maximum per home
 - **Capacity share:** Additional \$1,250 per home
- BYOD design provides customer choice
- Current battery partners include EnPhase, SolarEdge, Tesla (added February 2022)
- 18 applications received to date



EV Load Management

- **EV Data —**

- Launched new EV data pilot in November to collect info on baseline charging patterns
- Customer incentives
 - \$25 sign-up; \$5/month
- 855 cars enrolled to date!

- **EV Chargers —**

- New \$250 rebates for ENERGY STAR® Level 2 connected EV smart chargers launched in December



2022 DSM Plan Overview



- Uses recently approved 2021 DSM Plan as starting point
 - Continues all current programs
 - Includes all new measures/modifications
 - Adds DR savings – Peak Solutions, Cool Rewards, Storage
 - Adds EE savings – targeting 1.4% level in 2022

2022 DSM Plan Focus Areas

Increased DR

- Residential Energy Storage Pilot
- Peak Solutions – Expand from ~28 MWs to 45 MWs
- Cool Rewards – Expand from 113 MWs to >150 MWs

Increased EE Savings

- Non-Res Existing Facilities, New Construction, Schools
- Smart thermostats, HVAC replacement
- Conservation behavior programs – HERS expansion, Behavioral DR
- Credit for iDSM measures (EE + DR + load shifting)
- Equity – Limited income, MF, Schools, Tribal Communities
- Shade Trees program targeted to disadvantaged communities

Demand Response

Preparing for Summer Season

- *2022 DSM Plan approval prior to June would allow us to:*
 - Address Cool Rewards event times in context of new retail rate periods
 - Need ability to call Cool Rewards events that extend outside the new 4-7pm on-peak period

Collaborative Input/Discussion



Thank You!

